# FACULTY MEMBERS

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ABRAMSKY, ZVIKA – Life Sciences Ph.D., Colorado State Univ., 1976 Research Interests: Community ecology of desert granivours. The importance of density dependent habitat selection. Interspecific competition and risk of predation in structuring communities of desert rodents. The relationship between productivity and diversity and reconciliation ecology. <u>zvika@bgu.ac.il</u>

ADAR, EILON - Geological & Environmental Sciences; joint appointment with Blaustein Inst. Desert Research. Ph.D., Univ. of Arizona, 1984 Research Interests: Evaluation of recharge in arid basins. Ground water modeling with environmental tracers. Modeling of ground water contamination in fractured chalk aquitard. eilon@bgu.ac.il AHARONI, AMIR – Life Sciences

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Ph.D., Univ. of Chicago, 1973 Research Interests: Collision theory. Quantum mechanical scattering. Light scattering. Nonlinear optics. Laser physics and chemistry. Atomic and molecular physics and chemisty. Dissociation of molecules. Charge exchange processes. Optimal control theory. Electronic transport phenomena in condensed phases. Degenerate quantum fluids. Bose-Einstein condensation. Thermodynamics. band@bgu.ac.il

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Ph.D., The Hebrew Univ., Jerusalem, 1973 Research Interests: 1) Organic electrochemistry synthesis and echanism. Organosilicon compounds; Functionalization of organic molecules; Electrocatalysis. 2) Molecular organic conductors: synthesis, structure, charge-transfer complexes and ionradical salts, conductivity, electrochemistry and spectral properties; 3) Electrochemistry in ionic liquids becker@bgu.ac.il

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squeezed states. Nonlinear dynamics. Singular potentials . Theoretical high-energy physics. daboul@bgu.ac.il

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FEINTUCH, AVRAHAM - Mathematics Ph.D., Univ. of Toronto, 1972 Research Interests: Operator theory. Linear systems. Optimal control. abie@math.bgu.ac.il EYAL, YEHUDA – Geological & Sciences Environmental Ph.D., The Hebrew Univ., 1976 Research geology, and paleo- Interests : Structural stress analysis of Israel, and Okanagan Columbia, Canada. area, British Development of the Dead Sea Rift and Brittle deformation, .associated structures joints. Parameters controlling joint spacing. .and pressure solution Stylolites eyal@bgu.ac.il

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FEINSTEIN, SHIMON - Geological & Environmental Sciences Ph.D., Ben Gurion Univ., 1985 Research Interests: Petroleum and source rock geochemistry. Maturity of organic materials. Thermo-tectonic evolution of sedimentary basins in different tectonic settings. Degradation processes of organic contaminants. shimon@bgu.ac.il

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Departments of Clinical Biochemistry and Chemistry, Ben-Gurion University of the Negev, POB 653, Beer-Sheva, 84105, ISRAEL. Office: 972-8-640-0633 Lab: 972-8-640-3382, 972-8-640-0245 Fax: 972-8-628-1361 Igheber@bgumail.bgu.ac.il GANOR, JIWCHAR - Geological & Environmental Sciences Ph.D., The Hebrew Univ., 1992 Research Interests: Kinetics of dissolution and precipitation of minerals at low temperature-laboratory experiments and modeling. ganor@bgu.ac.il

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Ph.D., The Hebrew Univ. 1980 Research Interests: Penotypic plasticity in the root system of desert plants. Integration between parts of the root system as a response to environmental factors. Below ground habitat selection in plants. I test among a passive model of habitat selection, an animal-based model (ideal free distribution, Fretwell and Lucas 1970), and a game theoretic model that permits plants to adjust their root growth strategy to the roots of ompeting plants. gersani@bgu.ac.il

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1998 Research Interests: Igneous and metamorphic petrology. Stable isotope geochemistry. Tectonics of orogens focused on the Alpine-Himalayan and the Pan-African orogen. ykatzir@bgu.ac.il

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Design Principles of Protein Interaction Specificity. Promiscuity and Plasticity in Protein Interaction Network. Biological Self-assembly. Novel Methods for DNA Mutation Analysis Based on Nanoparticle. Self-assembly. Computational Design of Nano-Materials with Biological Molecules. Membrane Fusion. Protein-Membrane Interaction. Electrostatic Fluctuation and Correlation Induced Interaction in Thin Films, Membranes, Biopolymers and Colloidal Solutions. MANASSEN, YISHAY - Physics Ph.D., Tel-Aviv Univ., 1988 Research Interests: Scanning probe microscopy . Nanomagnetism. Kinetics of epitamal growth . Nano-device fabrication. Development of new scanning probe techniques. Corrosion of heavy metal. manassen@bgu.ac.il MARKUS, ALEXANDER - (emeritus) Mathematics Ph.D., Univ. of Baku, USSR, 1959 Research Interests: Operator theory. Functional analysis. Matrix theory. markus@math.bgu.ac.il

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MEIR, YIGAL - Physics Ph.D., Tel-Aviv Univ. 1988. Research Interests: Condensed matter theory . Mesoscopics and many body problems. ymeir@bgu.ac.il MERON, EHUD - Physics-Ph.D., The Weizmann Inst., 1986 Blaustein Inst. for Desert Research Research Interests: Nonlinear dynamics and pattern formation. Physics of complex systems. Theoretical ecology. ehud@bgu.ac.il

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MELKMAN, AVRAHAM - Computer Science Ph.D., University of California at Berkeley, 1971 RESEARCH INTERESTS: Bioinformatics, Clustering algorithms for microarrays, functional prediction. melkman@cs.bgu.ac.il

MIZRAHI, YOSEF – Life Sciences Ph.D., The Hebrew Univ., 1972 Research Interests: Introduction of wild fruit trees as crops to desert areas. Production under salinity. Biology of cacti. Nonripening mutants. Secondary metabolites from exotic edible fruits <u>mizrahi@bgu.ac.il</u>

MOALEM, AMNON - Physics Ph.D., Tel-Aviv Univ., 1972 Research Interests: Nuclear reaction and nuclear structure: Meson hydroproduction. CP and CTP violations in 1020)?MeV) decays. Chiral theory of vectors. Nuclear medicine . Pseudoscalars and baryons. moalem@bgu.ac.il

MORDECHAI, SHAUL - Physics Ph.D., The Hebrew Univ,. 1972 Research Interests: Optical diagnostics and medical informatics. shaulm@bgu.ac.il

MOREH, RAYMOND - (emeritus) Physics Ph.D., The Hebrew Univ., 1965 Research Interests: Nuclear physics. Surface physics . Scanning tunneling microscope. MEYERSTEIN, DAN - Chemistry (emeritus) Ph.D., The Hebrew Univ., 1965 Research Interests: Inorganic chemistry. Catalysis. Radical chemistry. Redox processes. Complexes with metal carbon bonds. Bioinorganic chemistry danmeyer@bgu.ac.il

MISHMAR, DAN – Life Sciences, NIBN Ph.D., The Hebrew Univ., 2000 Research Interests: Population genetics of human mitochondrial genetic variation. Genetics of age related disorders: type II diabetes and age-related macular degeneration. Mitochondrial evolution. <u>dmishmar@bgu.ac.il</u>

OVADIA, OFER – Life Sciences Ph.D., Ben-Gurion Univ., 1999 Research Interests: Developing analytical theory and computational models linking evolutionary biology and population/ community ecology. Using molecular techniques and arthropod communities as a model system to investigate links between trait (e.g. morphology, behavior and life history) variation and population/ community dynamics. oferovad@bgu.ac.il

OWEN, DAVID – Physics (emeritus) Ph.D., The Johns Hopkins Univ., 1970 Research Interests: Quantum electro-dynamics . Field theory. Kaluza-Klein. General relativity . Dark matter. owen@bgu.ac.il

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PELLY, ITHAMAR – (retired) Geological & Environmental Sciences Ph.D., The Hebrew Univ., 1967 Research Interests: Analytical geochemistry. Applied geochemistry and mineralogy. Thermal analysis. Heating stage microscopy. Environmental chemistry. Neutralization of acidic sludges using coal fly ash. PERETZ, RONEN - Mathematics & Computer Science Ph.D., The Technion, 1989 Research Interests: Algebraic geometry. Polynomial mappings. Complex analysi (extremal problems, geometric function theory, circle packing). ronenp@math.bgu.ac.il

PINES, EHUD - Chemistry Ph.D., Tel-Aviv Univ., 1989 Research Interests: Laser spectroscopy of ultrafast phenomena. Ultrafast bimolecular reaction dynamics in solution. Acid-base processes in inhomogenons aqueous media and at surfaces of macromolecules. Non-specific (medium) control of biological reactivity.

# PINSHOW, BERRY - Life Sciences & Mitrani Dept. of Desert Ecology (BIDR) Ph.D., Duke Univ., 1975 Research Interests: Physiological ecology of desert animals; energy and water exchange between animals and the environment; thermoregulation and osmoregulation in desert animals; body composition and water and energy balances of birds and bats, particularly with respect to flight and migration. pinshow@bgu.ac.il

POLAK, MICHA - Chemistry Ph.D., Tel-Aviv Univ., 1975 Research Interests: Surface science: Surface segregation and ordering (SRO, LRO) in binary and ternary alloys including nanoclusters (statistical mechanical computations of compositions structures and heat capacity). Surface analysis by electron spectroscopies (XPS, AES). mpolak@bgu.ac.il

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PROSS, ADDY - Chemistry Ph.D., Univ. of Sydney, 1970 Research Interests: Physical organic chemistry. Theoretical organic chemistry. Application of qualitative models for understanding organic reactivity. Origin of life. Mechanism for emergence of biologicalcomplexity. pross@bgu.ac.il RABINOVITCH, AVINOAM - Physics D.Sc., The Technion, 1969 Research Interests: Biological physics . Nonlinear dynamics. Fracture physics. avinoam@bgu.ac.il

RAVEH, DINA – Life Sciences Ph.D., Weizmann Inst., 1976 Research Interests: Genome stability: Link between the DNA damage response and the ubiquitin-proteasome system of protein degradation. Protein quality control. raveh@bgu.ac.il

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SHAGAM, REGINALD - (retired) Geological & Environmental Sciences Ph.D., University of Princeton, 1956 Research Interests: Large scale tectonics, particularly origin of mountain belts with special focus on the Andes in Venezuela and Colombia. rahagam@bgu.ac.il

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SHIMONY, EYAL - Computer Science Ph.D., Brown University, 1991 RESEARCH INTERESTS: Artificial Intelligence. Probabilistic Reasoning. Application of Probabilistic Reasoning to Search, Constraint Satisfaction, Data Mining, Robotics, Pattern Recognition (Vision, Sonar Sensing), AI and Law, Spatial Databases. Bounded Rationality and Flexible Computation (Anytime Algorithms). <u>shimony@cs.bgu.ac.il</u> SHOSHAN-BARMATZ, VARDA –
Life Sciences, NIBN Director Ph.D., Weizmann Inst., 1978
Research Interests: Coupling mechanism for ATP-dependent ion transport. Ryanodine receptor/ Ca<sup>2+</sup> release channel. ATP transport in synaptic vesicles. Ca<sup>2+</sup> transport in mitochondria. Crosstalk between cellular compartments. Mitochondrial VDAC: structure-function, apoptosis and cancer. <u>vardasb@bgu.ac.il</u>

SHUKER, REUBEN - Physics

Ph.D., Catholic Univ. of America, 1971 Research Interests: Quantum optics . Laser without inversion. Nonlinear optics . Raman scattering in solids. Lasers. Discharges and modelling and optogalvanic effect and spectroscopy . Atomic physics . shuker@bgu.ac.il

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### STEINITZ, RAPHAEL - Physics

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Research Interests: Astrophysics. Solar physics .
Magnetic fields. Chemical abundances.
Stellar coronae .
Stellar winds. Diamagnetic effects.
Dielectronic
recombination. Spin correlation in binaries.
Sociobiological aspects of aggression.
Violence and human culture behaviour.
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TAL, MOSHE – Life Sciences (emeritus) Ph.D., Univ. of California, 1965 Research Interests: The role of the active oxygen species and the antioxidative system in the mechanism of stress tolerance. Genetics and physiology. <u>motal@bgu.ac.il</u>

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TURAEV, DMITRY - Mathematics Ph.D., Nizhny Novgorod Univ., 1991 Research Interests: Nonlocal bifurcations in dynamical systems. turaev@math.bgu.ac.il TSUKERBLAT S. BORIS - Chemistry Ph.D., Kazan State Univ., 1967 D.Sc., State Univ. of Tartu, 1975 Research Interests: Molecular magnetism, magnetic interactions in metal clusters, mixed valency and double exchange. Vibronic interactions and Jahn-Teller effect in molecules and crystals. Optical properties of molecules, transition metal complexes and impurity centers in doped crystals. Group theory and theory of the irreducible tensor operators with application to the problems of spectroscopy and molecular magnetism. tsuker@bgu.ac.il.

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VOLIS, SERGEI – Life Sciences Ph.D., Ben-Gurion Univ., 2002 Research Interests: Plant conservation biology, reintroduction. Plant population ecology. Ecological genetics. Natural selection in plant populations. volis@bgu.ac.il

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